

## Claims

1. Method for transmitting measured values between two measurement  
5 transmitters, which transmit, via two communication connections, digital  
signals according to the master/slave principle and analog signals to a  
control system, which serves as master,  
characterized in that  
the digital signals are transmitted also between the two measurement  
10 transmitters via an additional communication connection and the  
receiver measurement transmitter examines incoming digital signals for  
at least one characteristic value of the transmitting measurement  
transmitter, in order to find measured values needed for evaluation in the  
receiver measurement transmitter.  
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2. Method as claimed in claim 1, characterized in that communication  
between the measurement transmitters and the control system occurs  
according to the HART<sup>®</sup>-standard.
- 20 3. Method as claimed in one of the preceding claims, characterized in  
that the receiver measurement transmitter evaluates the units  
characterizing number associated with a given numerical value and  
wherein meaning of the units characterizing number is established in the  
HART<sup>®</sup>-standard.  
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4. Method as claimed in one of the preceding claims, characterized in  
that the transmitting measurement transmitter is placed in the HART<sup>®</sup>  
burst mode, for transmitting its measured values in regular intervals.
- 30 5. Method as claimed in one of the claims 1-3, characterized in that the  
receiver measurement transmitter is operated in master mode and reads  
the measured values out of the transmitting measurement transmitter.

6. Method as claimed in one of the preceding claims, characterized in that the receiver measurement transmitter and the transmitting measurement transmitter register different measured variables.
- 5     7. Method as claimed in claim 6, characterized in that, in the receiver measurement transmitter, a computer unit is installed with an evaluation program, which determines from the different measured variables a derived measurement variable.
- 10    8. Method as claimed in claim 6 or 7, characterized in that the receiver measurement transmitter is a vortex measuring device and the transmitting measurement transmitter is a pressure measuring device, which determine, respectively, flow velocity and pressure in a medium.
- 15    9. Method as claimed in claim 8, characterized in that, installed in the vortex measuring device is a flow computing unit, which determines, from the pressure value and flow velocity of the medium, a derived, measured variable (e.g. a value for heat flux).
- 20    10. Method as claimed in claim 8 to 9, characterized in that the vortex measuring device contains an additional, installed, temperature sensor.
- 25    11. Method as claimed in claim 10, characterized in that, installed in the vortex measuring device is a flow computing unit, which determines from the flow velocity of the medium, the temperature value and the pressure, a derived, measured variable (e.g. heat flux value or mass flow value).
- 30    12. Method as claimed in claim 6 or 7, characterized in that the receiver measurement transmitter is a vortex measuring device with an installed, additional, temperature sensor, and the transmitting measurement transmitter is a temperature measuring device.

13. Method as claimed in claim 12, characterized in that, in the measuring device, a flow computing unit is installed, which determines from the flow velocity of the medium, the temperature value of the temperature sensor of the vortex measuring device and the temperature value of the temperature measuring device, a derived, measured variable (e.g. energy drain).

14. Method as claimed in claim 6 or 7, characterized in that the receiver measurement transmitter is a vortex measuring device and the transmitting measurement transmitter is a temperature measuring device, which determine, respectively, flow velocity and temperature in a medium.

15. Method as claimed in claim 14, characterized in that, in the vortex measuring device, a flow computing unit is installed, which determines from the flow velocity of the medium and the temperature, a derived, measured variable (e.g. heat flux value or mass flow value, for liquids or saturated steam).

16. Method as claimed in claim 1 to 15, wherein the receiver measurement transmitter accepts and evaluates signals from more than one transmitting measurement transmitter.

17. Method as claimed in claim 8 to 16, wherein the receiver measurement transmitter is a Coriolis flow measuring device, an ultrasonic flow measuring device or a magneto-inductively or thermally working, flow measuring device.